

**SYSTEM AND METHOD OF TREATING STUTTERING  
BY NEUROMODULATION**

**Abstract of the Invention**

Stuttering-treatment techniques using neural stimulation and/or drug delivery. One or more electrodes and/or a catheter are implanted adjacent to sites in the brain. A signal generator and the electrode deliver stimulation to a first site. A pump and the catheter deliver one or more therapeutic drugs to a second site. The first and second sites could be: the supplementary motor area, the centromedian circuit, the dorsomedial nuclei, the lateral prefrontal circuit, or other paramedian thalamic and midbrain nuclei. The stuttering treatment could be performed via periodic transcranial magnetic stimulation. A sensor, located near the patient's vocal folds, can be used for generating a signal responsive to activity of the patient's speech-producing muscles. A controller adjusts one or more stimulation parameters in response to the signal from the sensor.